

TABLES OF THE COMBINED METHOD FOR DETERMINATION OF AGE AT DEATH GIVEN BY NEMESKÉRI, HARSÁNYI AND ACSÁDI*

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This method concerns determination of the age at death of adult individuals based on four age indicators. These are the *endocranial suture closure*, the *symphysis osseum pubis*, and the structure of the *spongiosa* in the proximal epiphysis of the *humerus* and the *femur* as observed when sectioned longitudinally. The first two age indicators may appear in five different age phases, the other two in six.

Originally the method for determination of the age at death using the age indicators jointly was published by NEMESKÉRI, HARSÁNYI and ACSÁDI (1960), but it was later more fully described by ACSÁDI and NEMESKÉRI (1970) with some minor modifications. For the precise definitions and illustrations of the different phases of the age indicators it is referred to either of these two publications, together with which these tables are intended to be used. Because of the minor modifications of the method which had been made, mostly concerning small adjustments of the means and of the calculated upper and lower limits of range, the present tables were calculated by means of the information given ACSÁDI and NEMESKÉRI (1970). All age determinations were calculated to two decimal places, but the age determinations may be rounded off in practical cases. It is, however, important not only to publish the ages determined, but also the sequences of age indicators leading to the determinations.

In calculating the tables all possible combinations of the age indicator phases were taken into account, although some of the combinations are very unlikely to occur in a normal development of ageing. A careful examination of each skeleton is therefore required to reveal pathologic or other causes which may have accelerated or retarded the absolute or relative development of the age indicators, or which may point to quite another stage of ageing than indicated by the combined method. Thus, an over-simplified or a too mechanistic employment of this method in general and of these tables in particular has to be avoided by all means, as stressed in both the publications referred to.

How to use the tables: The first five tables (which constitute the main table because all four age indicators are present) are indexed according to the phases I—V of the symphyseal face. When the table page of the appropriate *symphyseal phase* is found, the sub-table corresponding to the observed phase of the *femur* is sought. In this sub-table the age corresponding to the observed sequence of age indicators is directly read by reading off the age corresponding to the row with the appropriate phase of the *humerus* and the column corresponding to the appropriate phase of *endocranial suture closure*.

Example: The observed sequence is: Symphyseal face: Phase III, femur: Phase IV, humerus: Phase I and suture: Phase IV.

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Search the table entitled: **SYMPHYSIAL FACE: PHASE III**, then the sub-table entitled **Femur, proximal epiphysis: Phase IV**, and look up the age corresponding to the row *Humerus, proximal epiphysis: Phase I* and the column corresponding to *Endocranial suture closure: Phase IV*. The age read is 52.75 years.

The next four tables concern age determinations when one of the age indicators is missing. These tables are indexed by means of the missing age indicator. In the first two tables the sub-tables are headed by the phase of the symphysis, in the other two by the phase of the femur. When the table corresponding to the missing age indicator is found, the age determination is carried out as in the first named (complete) case when the page corresponding to the phase of the symphysis was found.

The last two tables concern the cases when *two* of the age indicators are missing. The one table gives the cases when the one age indicator is the symphyseal face, the other the cases when the symphyseal face is missing. In these tables the age intervals are explicitly given.

For completeness, in the case when only *one* age indicator is present, the following age intervals, quoted from ACSÁDI and NEMESKÉRI (1970), should be used:

Endocranial suture closure		Symphyseal face		Femur, proximal epiphysis		Humerus, proximal epiphysis	
Phase	Age range	Phase	Age range	Phase	Age range	Phase	Age range
I	23—40	I	23—40	I	23—40	I	23—60
II	30—60	II	35—55	II	35—55	II	30—60
III	30—60	III	40—60	III	40—60	III	40—70
IV	40—80	IV	50—70	IV	50—70	IV	40—70
V	40—80	V	60—80	V	50—75	V	50—80
				VI	50—80	VI	50—80

For appropriate age intervals when more than one age indicator is present, see the notes in connection with the tables.

References

- NEMESKÉRI, J.—HARSÁNYI, L.—ACSÁDI, GY. (1960): Methoden zur Diagnose des Lebensalter von Skelettfunden. — *Anthrop. Anz.* 24; 70—95.
 ACSÁDI, GY.—NEMESKÉRI, J. (1970): *History of Human Life Span and Mortality*. — Akadémiai Kiadó, Budapest.

A Nemeskéri—Harsányi—Acádi-féle elhalálzási kormeghatározáshoz kidolgozott kombinált módszer táblázatai

Írta: Sjøvold, T.

A felnőtt egyének elhalálzási korának megállapítására vonatkozóan ez a módszer négy életkori jelzőt vesz meghatározási alapul. Ezek az *endocranialis varratok záródása*, a *symphysis osseum pubis*, valamint a *humerus* és a *femur proximalis* epiphysisében a szivacsos állomány szerkezete, hosszanti metszeteken vizsgálva. Az első két életkori jelzőt, a másik kettőt hat különböző életkori fázisban fordulhat elő.

Az elhalálzási életkor meghatározására szolgáló módszert, amely az életkori jelzőket veszi figyelembe, eredetileg NEMESKÉRI, HARSÁNYI és ACSÁDI (1960) publikálta, később azonban ACSÁDI és NEMESKÉRI (1970) sokkal részletesebben írta le, néhány kisebb módosítással. Az életkori jelzők különböző fázisainak pontos definiálása és illusztrálása érdekében e két publikáció valamelyikét ajánlatos a jelen táblázatokkal együtt használni. Mivel a módszerrel kapcsolatban történt csekély változtatások főleg a középtértek és a terjedelem alsó és felső határainak bizonyos kiegyenlítésére vonatkoznak, a jelen táblázatok értékeit az ACSÁDI és NEMESKÉRI-től (1970) kapott információk segítségével számítottuk ki. Az összes kormeghatározást két tizedes

értékre számítottuk ki, de a gyakorlatban ezek az értékek kerekíthetők. Fontos azonban, hogy ne csak a meghatározott életkorokat publikáljuk, hanem az életkori jelzők sorrendjét is, amelyek a meghatározáshoz vezetnek.

A táblázatokban szereplő értékek kiszámításánál az életkorjelző fázisok minden lehetséges kombinációját számításba vettük annak ellenére, hogy néhány ilyen kombináció valószínűleg nem fordul elő az öregedés normális folyamatában. Minden egyes csontváz gondos átvizsgálása eredményeképpen tehát okvetlenül megmutatkoznak azok a patológiai vagy bármilyen más okok, amelyek az életkori jelzők abszolút, ill. relatív kifejlődését gyorsíthatják, ill. lassíthatják, vagy amelyek rámutathatnak esetleg egészen más öregedési stádiumra, mint amit a kombinált módszer alkalmazása során kapunk. Így mindenképpen kerülni kell általában a módszer és különösen e táblázatok nagyon leegyszerűsített, ill. túlságosan mechanisztikus használatát, amint erre mindkét idézett publikációban nyomatékos utalást találunk.

A táblázatok használata. Az első öt oldalt (amely a táblázat fő részét alkotja, mivel mind a négy életkori jelző jelen van) a symphysis felszín I—V. fázisa szerint jelöltük. Ha megtaláltuk a megfelelő *symphysis fázis* tábla-oldalát, keressük meg a *femur* megfigyelt fázisának megfelelő altáblázatot. Ebben az altáblázatban pontosan értelmezhető az életkor, amely megegyezik az életkori jelzők megfigyelt sorrendjével, azáltal, hogy leolvassuk a *humerus* megfelelő fázisának sora és az *endocranialis varratok záródásának* megfelelő fázis oszlopa találkozásánál adódó életkort.

Példa: A megfelelő sorrend a következő: Symphysis felszín: III. fázis; femur: IV. fázis; humerus: I. fázis; varrat: IV. fázis.

Nézzük a SYMPHYSIS FELSZÍN III. FÁZIS című oldalt, majd az altáblázaton a **Femur, proximalis epiphysis IV. fázisát**. Ezután kikeressük a *Humerus, proximalis epiphysis I. fázisának* megfelelő életkor sorát, végül az *Endocranialis varratzáródás IV. fázisának* megfelelő oszlopot. A leolvasott életkor eszerint: 52,75 év.

A következő négy oldal azokra az életkor-meghatározásokra vonatkozik, amelyeknél az egyik életkori jelző hiányzik. Ezeket az oldalakat a hiányzó életkori jelzők szerint jelöljük. Ezek első két oldalán az altáblázatok a symphysis fázisa, a következő kettőt pedig a femur fázisa címmel jelöljük. Ha megtaláltuk a hiányzó életkori jelzőnek megfelelő oldalt, az életkor-meghatározást úgy alkalmazzuk, mint az elsőként leírt (hiánytalan) esetben, amikor a symphysis fázisnak megfelelő oldalt megkaptuk.

Az utolsó két oldal azokra az esetekre vonatkozik, amikor *két* életkori jelző hiányzik. Az első oldal azokat az eseteket adja meg, amelyeknél az egyik korjelző a symphysis felszíne, míg a másik azokat, amelyeknél a symphysis felszín hiányzik. Ezekben a táblázatokon az életkor intervallumokat kifejezetten megadjuk.

A teljesség kedvéért jegyezzük meg, hogy abban az esetben, ha csak egy életkori jelző van adva, a következő életkor intervallumokat kell használni (ACSÁDI és NEMESKÉRI, 1970 munkájából; a táblázatos összefoglalást lásd a 10. oldalon, az angol nyelvű szövegben!). Ha egynél több életkori jelző áll rendelkezésünkre, a helyes korintervallumok megállapítására lásd a táblázatokkal kapcsolatos jegyzeteket is!

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SYMPHYSEAL FACE: PHASE I

Femur, proximal epiphysis: Phase I						Femur, proximal epiphysis: Phase II						
Endocranial suture closure						Endocranial suture closure						
Phase	I	II	III	IV	V	Phase	I	II	III	IV	V	
<i>Humerus, proximal epiphysis</i>	I	23.00	26.00	28.50	30.50	31.75	I	26.00	29.00	31.50	33.50	34.75
	II	27.50	30.50	33.00	35.00	36.25	II	30.50	33.50	36.00	38.00	39.25
	III	29.25	32.25	34.75	36.75	38.00	III	32.25	35.25	37.75	39.75	41.00
	IV	30.25	33.25	35.75	37.75	39.00	IV	33.25	36.25	38.75	40.75	42.00
	V	30.75	33.75	36.25	38.25	39.50	V	33.75	36.75	39.25	41.25	42.50
	VI	31.00	34.00	36.50	38.50	39.75	VI	34.00	37.00	39.50	41.50	42.75

Femur, proximal epiphysis: Phase III						Femur, proximal epiphysis: Phase IV						
Endocranial suture closure						Endocranial suture closure						
Phase	I	II	III	IV	V	Phase	I	II	III	IV	V	
<i>Humerus, proximal epiphysis</i>	I	28.25	31.25	33.75	35.75	37.00	I	29.75	32.75	35.25	37.25	38.50
	II	32.75	35.75	38.25	40.25	41.50	II	34.25	37.25	39.75	41.75	43.00
	III	34.50	37.50	40.00	42.00	43.25	III	36.00	39.00	41.50	43.50	44.75
	IV	35.50	38.50	41.00	43.00	44.25	IV	37.00	40.00	42.50	44.50	45.75
	V	36.00	39.00	41.50	43.50	44.75	V	37.50	40.50	43.00	45.00	46.25
	VI	36.25	39.25	41.75	43.75	45.00	VI	37.75	40.75	43.25	45.25	46.50

Femur, proximal epiphysis: Phase V						Femur, proximal epiphysis: Phase VI						
Endocranial suture closure						Endocranial suture closure						
Phase	I	II	III	IV	V	Phase	I	II	III	IV	V	
<i>Humerus, proximal epiphysis</i>	I	30.75	33.75	36.25	38.25	39.50	I	31.75	34.75	37.25	39.25	40.50
	II	35.25	38.25	40.75	42.75	44.00	II	36.25	39.25	41.75	43.75	45.00
	III	37.00	40.00	42.50	44.50	45.75	III	38.00	41.00	43.50	45.50	46.75
	IV	38.00	41.00	43.50	45.50	46.75	IV	39.00	42.00	44.50	46.50	47.75
	V	38.50	41.50	44.00	46.00	47.25	V	39.50	42.50	45.00	47.00	48.25
	VI	38.75	41.75	44.25	46.25	47.50	VI	39.75	42.75	45.25	47.25	48.50

Note: The margin of error in individual age determinations according to this table is approximately ± 2.5 years with a confidence of 80-85 per cent.

SYMPHYSIAL FACE: PHASE II

Femur, proximal epiphysis: Phase I						Femur, proximal epiphysis: Phase II						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	26.50	29.50	32.00	34.00	35.25	I	29.50	32.50	35.00	37.00	38.25
	II	31.00	34.00	36.50	38.50	39.75	II	34.00	37.00	39.50	41.50	42.75
	III	32.75	35.75	38.25	40.25	41.50	III	35.75	38.75	41.25	43.25	44.50
	IV	33.75	36.75	39.25	41.25	42.50	IV	36.75	39.75	42.25	44.25	45.50
	V	34.25	37.25	39.75	41.75	43.00	V	37.25	40.25	42.75	44.75	46.00
	VI	34.50	37.50	40.00	42.00	43.25	VI	37.50	40.50	43.00	45.00	46.25

Femur, proximal epiphysis: Phase III						Femur, proximal epiphysis: Phase IV						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	31.75	34.75	37.25	39.25	40.50	I	33.25	36.25	38.75	40.75	42.00
	II	36.25	39.25	41.75	43.75	45.00	II	37.75	40.75	43.25	45.25	46.50
	III	38.00	41.00	43.50	45.50	46.75	III	39.50	42.50	45.00	47.00	48.25
	IV	39.00	42.00	44.50	46.50	47.75	IV	40.50	43.50	46.00	48.00	49.25
	V	39.50	42.50	45.00	47.00	48.25	V	41.00	44.00	46.50	48.50	49.50
	VI	39.75	42.75	45.25	47.25	48.50	VI	41.25	44.25	46.75	48.75	50.00

Femur, proximal epiphysis: Phase V						Femur, proximal epiphysis: Phase VI						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	34.25	37.25	39.75	41.75	43.00	I	35.25	38.25	40.75	42.75	44.00
	II	38.75	41.75	44.25	46.25	47.50	II	39.75	42.75	45.25	47.25	48.50
	III	40.50	43.50	46.00	48.00	49.25	III	41.50	44.50	47.00	49.00	50.25
	IV	41.50	44.50	47.00	49.00	50.25	IV	42.50	45.50	48.00	50.00	51.25
	V	42.00	45.00	47.50	49.50	50.75	V	43.00	46.00	48.50	50.50	51.75
	VI	42.25	45.25	47.75	49.75	51.00	VI	43.25	46.25	48.75	50.75	52.00

Note: The margin of error in individual age determinations according to this table is approximately ± 2.5 years with a confidence of 80-85 per cent.

SYMPHYSIAL FACE: PHASE III

Femur, proximal epiphysis: Phase I						Femur, proximal epiphysis: Phase II						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
<i>Phase</i>	I	II	III	IV	V	<i>Phase</i>	I	II	III	IV	V	
<i>Humerus, proximal epiphysis</i>	I	39.00	42.50	44.75	46.50	47.25	I	41.75	45.25	47.50	49.25	50.00
	II	41.50	45.00	47.25	49.00	49.75	II	44.25	47.75	50.00	51.75	52.50
	III	43.00	46.50	48.75	50.50	51.25	III	45.75	49.25	51.50	53.25	54.00
	IV	43.50	47.00	49.25	51.00	51.75	IV	46.25	49.75	52.00	53.75	54.50
	V	44.00	47.50	49.75	51.50	52.25	V	46.75	50.25	52.50	54.25	55.00
	VI	44.25	47.75	50.00	51.75	52.50	VI	47.00	50.50	52.75	54.50	55.25

Femur, proximal epiphysis: Phase III						Femur, proximal epiphysis: Phase IV						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
<i>Phase</i>	I	II	III	IV	V	<i>Phase</i>	I	II	III	IV	V	
<i>Humerus, proximal epiphysis</i>	I	43.75	47.25	49.50	51.25	52.00	I	45.25	48.75	51.00	52.75	53.50
	II	46.25	49.75	52.00	53.75	54.50	II	47.75	51.25	53.50	55.25	56.00
	III	47.75	51.25	53.50	55.25	56.00	III	49.25	52.75	55.00	56.75	57.50
	IV	48.25	51.75	54.00	55.75	56.50	IV	49.75	53.25	55.50	57.25	58.00
	V	48.75	52.25	54.50	56.25	57.00	V	50.25	53.75	56.00	57.75	58.50
	VI	49.00	52.50	54.75	56.50	57.25	VI	50.50	54.00	56.25	58.00	58.75

Femur, proximal epiphysis: Phase V						Femur, proximal epiphysis: Phase VI						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
<i>Phase</i>	I	II	III	IV	V	<i>Phase</i>	I	II	III	IV	V	
<i>Humerus proximal epiphysis</i>	I	46.50	50.00	52.25	54.00	54.75	I	47.50	51.00	53.25	55.00	55.75
	II	49.00	52.50	54.75	56.50	57.25	II	50.00	53.50	55.75	57.50	58.25
	III	50.50	54.00	56.25	58.00	58.75	III	51.50	55.00	57.25	59.00	59.75
	IV	51.00	54.50	56.75	58.50	59.25	IV	52.00	55.50	57.75	59.50	60.25
	V	51.50	55.00	57.25	59.00	59.75	V	52.50	56.00	58.25	60.00	60.75
	VI	51.75	55.25	57.50	59.25	60.00	VI	52.75	56.25	58.50	60.25	61.00

Note: The margin of error in individual age determinations according to this table is approximately ± 2.5 years with a confidence of 80—85 per cent. However, for age determinations between 60 and 61 years, the upper limit must be raised to the age of 70.

SYMPHYSIAL FACE: PHASE IV

Femur, proximal epiphysis: Phase I

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	51.75	55.00	57.00	58.50	60.00
	II	52.75	56.00	58.00	59.50	61.00
	III	53.75	57.00	59.00	60.50	62.00
	IV	54.25	57.50	59.50	61.00	62.50
	V	54.75	58.00	60.00	61.50	63.00
	VI	55.00	58.25	60.25	61.75	63.25

Femur, proximal epiphysis: Phase II

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	54.25	57.50	59.50	61.00	62.50
	II	55.25	58.50	60.50	62.00	63.50
	III	56.25	59.50	61.50	63.00	64.50
	IV	56.75	60.00	62.00	63.50	65.00
	V	57.25	60.50	62.50	64.00	65.50
	VI	57.50	60.75	62.75	64.25	65.75

Femur, proximal epiphysis: Phase III

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	55.75	59.00	61.00	62.50	65.00
	II	56.75	60.00	62.00	63.50	65.00
	III	57.75	61.00	63.00	64.50	66.00
	IV	58.25	61.50	63.50	65.00	66.50
	V	58.75	62.00	64.00	65.50	67.00
	VI	59.00	62.25	64.25	65.75	67.25

Femur, proximal epiphysis: Phase IV

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	57.50	60.75	62.75	64.25	65.75
	II	58.50	61.75	63.75	65.25	66.75
	III	59.50	62.75	64.75	66.25	67.75
	IV	60.00	63.25	65.25	66.75	68.25
	V	60.50	63.75	65.75	67.25	68.75
	VI	60.75	64.00	66.00	67.50	69.00

Femur, proximal epiphysis: Phase V

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	58.75	62.00	64.00	65.50	67.00
	II	59.75	63.00	65.00	66.50	68.00
	III	60.75	64.00	66.00	67.50	69.00
	IV	61.25	64.50	66.50	68.00	69.50
	V	61.75	65.00	67.00	68.50	70.00
	VI	62.00	65.25	67.25	68.75	70.25

Femur, proximal epiphysis: Phase VI

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	60.60	63.25	65.25	66.75	68.25
	II	61.00	64.25	66.25	67.75	69.25
	III	62.00	65.25	67.25	68.75	70.25
	IV	62.50	65.75	67.75	69.25	70.75
	V	63.00	66.25	68.25	69.75	71.25
	VI	63.25	66.50	68.50	70.00	71.50

Note: The margin of error in individual age determinations according to this table is approximately ± 2.5 years with a confidence of 80—85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 years to 75, and over 70 years, to the age of 80.

SYMPHYSEAL FACE: PHASE V

Femur, proximal epiphysis: Phase I						Femur, proximal epiphysis: Phase II						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	53.50	56.75	58.75	60.25	61.75	I	56.00	59.25	61.25	62.75	64.25
	II	54.50	57.75	59.75	61.25	62.75	II	57.00	60.25	62.25	63.75	65.25
	III	55.50	58.75	60.75	62.25	63.75	III	58.00	61.25	63.25	64.75	66.25
	IV	56.00	59.25	61.25	62.75	64.25	IV	58.50	61.75	63.75	65.25	66.75
	V	56.50	59.75	61.75	63.25	64.75	V	59.00	62.25	64.25	65.75	67.25
	VI	56.75	60.00	62.00	63.50	65.00	VI	59.25	62.50	64.50	66.00	67.50

Femur, proximal epiphysis: Phase III						Femur, proximal epiphysis: Phase IV						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	57.50	60.75	62.75	64.25	65.75	I	59.25	62.50	64.50	66.00	67.50
	II	58.50	61.75	63.75	65.25	66.75	II	60.25	63.50	65.50	67.00	68.50
	III	59.50	62.75	64.75	66.25	67.75	III	61.25	64.50	66.50	68.00	69.50
	IV	60.00	63.25	65.25	66.75	68.25	IV	61.75	65.00	67.00	68.50	70.00
	V	60.50	63.75	65.75	67.25	68.75	V	62.25	65.50	67.50	69.00	70.50
	VI	60.75	64.00	66.00	67.50	69.00	VI	62.50	65.75	67.75	69.25	70.75

Femur, proximal epiphysis: Phase V						Femur, proximal epiphysis: Phase VI						
<i>Endocranial suture closure</i>						<i>Endocranial suture closure</i>						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	60.50	63.75	65.75	67.25	68.75	I	61.75	65.00	67.00	68.50	70.00
	II	61.50	64.75	66.75	68.25	69.75	II	62.75	66.00	68.00	69.50	71.00
	III	62.50	65.75	67.75	69.25	70.75	III	63.75	67.00	69.00	70.50	72.00
	IV	63.00	66.25	68.25	69.75	71.25	IV	64.25	67.50	69.50	71.00	72.50
	V	63.50	66.75	68.75	70.25	71.75	V	64.75	68.00	70.00	71.50	73.00
	VI	63.75	67.00	69.00	70.50	72.00	VI	65.00	68.25	70.25	71.75	73.25

Note: The margin of error in individual age determinations according to this table is approximately ± 2.5 years with a confidence of 80—85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 years to 75, and over 70 years, to the age of 80.

FEMUR, PROXIMAL EPIPHYSIS MISSING

Symphysial face: Phase I

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	23.00	27.00	30.33	33.00	34.67
	II	29.00	33.00	36.33	39.00	40.67
	III	31.33	35.33	38.67	41.33	43.00
	IV	32.67	36.67	40.00	42.67	44.33
	V	33.33	37.33	40.67	43.33	45.00
	VI	33.67	37.67	41.00	43.67	45.33

Symphysial face: Phase II

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	27.67	31.67	35.00	37.67	39.33
	II	33.67	37.67	41.00	43.67	45.33
	III	36.00	40.00	43.33	46.00	47.67
	IV	37.33	41.33	44.67	47.33	49.00
	V	38.00	42.00	45.33	48.00	49.67
	VI	38.33	42.33	45.67	48.33	50.00

Symphysial face: Phase III

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	41.00	45.67	48.67	51.00	52.00
	II	44.33	49.00	52.00	54.33	55.33
	III	46.33	51.00	54.00	56.33	57.33
	IV	47.00	51.67	54.67	57.00	58.00
	V	47.67	52.33	55.33	57.67	58.67
	VI	48.00	52.67	55.67	58.00	59.00

Symphysial face: Phase IV

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	54.67	59.00	61.67	63.67	65.67
	II	56.00	60.33	63.00	65.00	67.00
	III	57.33	61.67	65.33	66.33	68.33
	IV	58.00	62.33	65.00	67.00	69.00
	V	58.67	63.00	65.67	67.67	69.67
	VI	59.00	63.33	66.00	68.00	70.00

Symphysial face: Phase V

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	57.00	61.33	64.00	66.00	68.00
	II	58.33	62.67	65.33	67.33	69.33
	III	59.67	64.00	66.67	68.67	70.67
	IV	60.33	64.67	67.33	69.33	71.33
	V	61.00	65.33	68.00	70.00	72.00
	VI	61.33	65.67	68.33	70.33	72.33

Note: The margin of error in individual age determinations according to this table is ± 3 years above and below the year determined with a confidence of 80—85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 years to 75, and over 70 years, to the age of 80.

HUMERUS, PROXIMAL EPIPHYSIS MISSING

Symphyseal face: Phase I						Symphyseal face: Phase II						
Endocranial suture closure						Endocranial suture closure						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Femur, proximal epiphysis</i>	I	23.00	27.00	30.33	33.00	34.67	I	27.67	31.67	35.00	37.67	39.33
	II	27.00	31.00	34.33	37.00	38.67	II	31.67	35.67	39.00	41.67	43.33
	III	30.00	34.00	37.33	40.00	41.67	III	34.67	38.67	42.00	44.67	46.33
	IV	32.00	36.00	39.33	42.00	43.67	IV	36.67	40.67	44.00	46.67	48.33
	V	33.33	37.33	40.67	43.33	45.00	V	38.00	42.00	45.33	48.00	49.67
	VI	34.67	38.67	42.00	44.67	46.33	VI	39.33	43.33	46.67	49.33	51.00

Symphyseal face: Phase III						Symphyseal face: Phase IV						
Endocranial suture closure						Endocranial suture closure						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Femur, proximal epiphysis</i>	I	38.33	43.00	46.00	48.33	49.33	I	50.00	54.33	57.00	59.00	61.00
	II	42.00	46.67	49.67	52.00	53.00	II	53.33	57.67	60.33	62.33	64.33
	III	44.67	49.33	52.33	54.67	55.67	III	55.33	59.67	62.33	64.33	66.33
	IV	46.67	51.33	54.33	56.67	57.67	IV	57.67	62.00	64.67	66.67	68.67
	V	48.33	53.00	56.00	58.33	59.33	V	59.33	63.67	66.33	68.33	70.33
	VI	49.67	54.33	57.33	59.67	60.67	VI	61.00	65.33	68.00	70.00	72.00

Symphyseal face: Phase V

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Femur, proximal epiphysis</i>	I	52.33	56.67	59.33	61.33	63.33
	II	55.67	60.00	62.67	64.67	66.67
	III	57.67	62.00	64.67	66.67	68.67
	IV	60.00	64.33	67.00	69.00	71.00
	V	61.67	66.00	68.67	70.67	72.67
	VI	63.33	67.67	70.33	72.33	74.33

Note: The margin of error in individual age determinations according to this table is ± 3 years above and below the year determined with a confidence of 80–85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 to 75, and over 70 years, to the age of 80.

SYMPHYSEAL FACE MISSING

Femur, proximal epiphysis: Phase I

Femur, proximal epiphysis: Phase II

Endocranial suture closure

Endocranial suture closure

	<i>Endocranial suture closure</i>					<i>Endocranial suture closure</i>						
	Phase I	II	III	IV	V	Phase I	II	III	IV	V		
<i>Humerus, proximal epiphysis</i>	I	23.00	27.00	30.33	33.00	34.67	I	27.00	31.00	34.33	37.00	38.67
	II	29.00	33.00	36.33	39.00	40.67	II	33.00	37.00	40.33	43.00	44.67
	III	31.33	35.33	38.67	41.33	43.00	III	34.33	39.33	42.67	45.33	47.00
	IV	32.67	36.67	40.00	42.67	44.33	IV	36.67	40.67	44.00	46.67	48.33
	V	33.33	37.33	40.67	43.33	45.00	V	37.33	41.33	44.67	47.33	49.00
	VI	33.67	37.67	41.00	43.67	45.33	VI	37.67	41.67	45.00	47.67	49.33

Femur, proximal epiphysis: Phase III

Femur, proximal epiphysis: Phase IV

Endocranial suture closure

Endocranial suture closure

	<i>Endocranial suture closure</i>					<i>Endocranial suture closure</i>						
	Phase I	II	III	IV	V	Phase I	II	III	IV	V		
<i>Humerus, proximal epiphysis</i>	I	41.00	45.67	48.67	51.00	52.00	I	54.00	58.33	61.00	63.00	65.00
	II	44.33	49.00	52.00	54.33	55.33	II	55.33	59.67	62.33	64.33	66.33
	III	46.33	51.00	54.00	56.33	57.33	III	56.67	61.00	63.67	65.67	67.67
	IV	47.00	51.67	54.67	57.00	58.00	IV	57.33	61.67	64.33	66.33	68.33
	V	47.67	52.33	55.33	57.67	58.67	V	58.00	62.33	65.00	67.00	69.00
	VI	48.00	52.67	55.67	58.00	59.00	VI	58.33	62.67	65.33	67.33	69.33

Femur, proximal epiphysis: Phase V

Femur, proximal epiphysis: Phase VI

Endocranial suture closure

Endocranial suture closure

	<i>Endocranial suture closure</i>					<i>Endocranial suture closure</i>						
	Phase I	II	III	IV	V	Phase I	II	III	IV	V		
<i>Humerus, proximal epiphysis</i>	I	56.67	60.00	62.67	64.67	66.67	I	57.33	61.67	64.33	66.33	68.33
	II	57.00	61.33	64.00	66.00	68.00	II	58.67	63.00	65.67	67.67	69.67
	III	58.33	62.67	65.33	67.33	69.33	III	60.00	64.33	67.00	69.00	71.00
	IV	59.00	63.33	66.00	68.00	70.00	IV	60.67	65.00	67.67	69.67	71.67
	V	59.67	64.00	66.67	68.67	70.67	V	61.33	65.67	68.33	70.33	72.33
	VI	60.00	64.33	67.00	69.00	71.00	VI	61.67	66.00	68.67	70.67	72.67

Note: The margin of error in individual age determinations according to this table is ± 3 years above and below the year determined with a confidence of 80—85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 to 75, and over 70 years, to the age of 80.

ENDOCRANIAL SUTURE CLOSURE MISSING

Femur, proximal epiphysis: Phase I						Femur, proximal epiphysis: Phase II						
Symphyseal face						Symphyseal face						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	23.00	27.67	42.00	56.00	58.33	I	27.00	31.67	45.67	59.33	61.67
	II	29.00	33.67	45.33	57.33	59.67	II	33.00	37.67	49.00	60.67	63.00
	III	31.33	36.00	47.33	58.67	61.00	III	35.33	40.00	51.00	62.00	64.33
	IV	32.67	37.33	48.00	59.33	61.67	IV	36.67	41.33	51.67	62.67	65.00
	V	33.33	38.00	48.67	60.00	62.33	V	37.33	42.00	52.33	63.33	65.67
	VI	33.67	38.33	49.00	60.33	62.67	VI	37.67	42.33	52.67	63.67	66.00

Femur, proximal epiphysis: Phase III						Femur, proximal epiphysis: Phase IV						
Symphyseal face						Symphyseal face						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	30.00	34.67	48.33	61.33	63.67	I	32.00	36.67	50.33	63.67	66.00
	II	36.00	40.67	51.67	62.67	65.00	II	38.00	42.67	53.67	65.00	67.33
	III	38.33	43.00	53.67	64.00	66.33	III	40.33	45.00	55.67	66.33	68.67
	IV	39.67	44.33	54.33	64.67	67.00	IV	41.67	46.33	56.33	67.00	69.33
	V	40.33	45.00	55.00	65.33	67.67	V	42.33	47.00	57.00	67.67	70.00
	VI	40.67	45.33	55.33	65.67	68.00	VI	42.67	47.33	57.33	68.00	70.33

Femur, proximal epiphysis: Phase V						Femur, proximal epiphysis: Phase VI						
Symphyseal face						Symphyseal face						
	Phase	I	II	III	IV	V	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	33.33	38.00	52.00	65.33	67.67	I	34.67	39.33	53.33	67.00	69.33
	II	39.33	44.00	55.33	66.67	69.00	II	40.67	45.33	56.67	68.33	70.67
	III	41.67	46.33	57.33	68.00	70.33	III	43.00	47.67	58.67	69.67	72.00
	IV	43.00	47.67	58.00	68.67	71.00	IV	44.33	49.00	59.33	70.33	72.67
	V	43.67	48.33	58.67	69.33	71.67	V	45.00	49.67	60.00	71.00	73.33
	VI	44.00	48.67	59.00	69.67	72.00	VI	45.33	50.00	60.33	71.33	73.67

Note: The margin of error in individual age determinations according to this table is ± 3 years above and below the year determined with a confidence of 80—85 per cent. However, for age determinations between 60 and 64 years, the upper limit must be raised to the age of 70, between 65 and 69 to 75, and over 70 years, to the age of 80.

TWO AGE INDICATORS MISSING

Symphysial face

	<i>Phase</i>	I	II	III	IV	V
<i>Femur proximal epiphysis</i>	I	28-36	34-42	38-46	42-50	46-54
	II	34-42	40-48	44-52	48-56	51-59
	III	38-46	44-52	48-56	52-60	55-63
	IV	41-49	47-55	51-59	55-63	58-66
	V	43-51	49-57	53-61	57-65	61-69
	VI	45-53	51-59	55-63	59-67	63-71

Symphysial face

	<i>Phase</i>	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	19-28	26-35	42-51	58-67	62-71
	II	28-37	35-44	47-56	60-69	64-73
	III	31-40	38-47	50-59	62-71	66-75
	IV	33-42	40-49	51-60	63-72	67-76
	V	34-43	41-50	52-61	64-73	68-77
	VI	35-44	42-51	53-62	65-74	69-78

Symphysial face

	<i>Phase</i>	I	II	III	IV	V
<i>Endocranial suture closure</i>	I	19-28	26-35	37-46	49-58	53-62
	II	25-34	32-41	44-53	56-65	59-68
	III	30-39	37-46	48-57	60-69	63-72
	IV	34-43	41-50	52-61	63-73	66-75
	V	36-45	43-52	53-62	66-75	69-78

Note: The age intervals may be taken as 80-85 per cent confidence intervals of the true chronological age.

TWO AGE INDICATORS MISSING

Femur, proximal epiphysis

	Phase	I	II	III	IV	V	VI
<i>Humerus, proximal epiphysis</i>	I	19-28	25-34	42-51	36-61	38-64	40-66
	II	28-37	34-43	47-56	59-68	47-66	49-68
	III	31-40	37-46	50-59	61-70	64-73	53-70
	IV	37-55	39-48	51-60	62-71	65-74	67-76
	V	38-56	44-61	52-61	63-72	66-75	68-77
	VI	39-56	45-61	49-64	64-73	66-75	69-78

Femur, proximal epiphysis

	Phase	I	II	III	IV	V	VI
<i>Endocranial suture closure</i>	I	19-28	25-34	37-46	36-52	38-55	40-57
	II	25-34	31-40	44-53	55-64	44-61	46-64
	III	30-39	36-45	48-57	59-68	61-70	51-68
	IV	38-54	40-49	52-61	62-71	64-73	67-76
	V	40-57	46-62	53-62	65-74	67-76	70-79

Endocranial suture closure

	Phase	I	II	III	IV	V
<i>Humerus, proximal epiphysis</i>	I	23-48	29-54	34-58	38-61	40-64
	II	32-50	38-56	43-60	47-63	49-66
	III	35-52	41-58	46-62	50-65	53-68
	IV	37-53	43-59	48-63	52-66	55-69
	V	38-54	44-60	49-64	53-67	56-70
	VI	39-54	45-61	50-65	54-68	56-71

Note: The age intervals may be taken as 90-95 per cent confidence intervals of the true chronological age. The age intervals given in *italics* are calculated by averaging the lower and the upper limits of range of the age indicator pair, respectively.